

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number: 17146-0008001
<p>I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, Box 1450, Alexandria, VA 22313-1450.</p> <p>_____</p> <p>Date of Deposit</p> <p>_____</p> <p>Signature</p> <p>_____</p> <p>Typed or Printed Name of Person Signing Certificate</p>	<p>Application Number</p> <p>10/826,947</p>	<p>Filed</p> <p>April 16, 2004</p>
	<p>First Named Inventor</p> <p>Stephen K. Pinto et al.</p>	
	<p>Art Unit</p> <p>2121</p>	<p>Examiner</p> <p>Tejal Gami</p>
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a Notice of Appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <p><input type="checkbox"/> applicant/inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input type="checkbox"/> attorney or agent of record _____ (Reg. No.)</p> <p><input checked="" type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 Reg. No. 66.240</p> </div> <div style="width: 45%; text-align: right;"> <p>/Yina Mo/</p> <p>_____ Signature</p> <p>Yina Mo _____ Typed or printed name</p> <p>(617) 542-5070 _____ Telephone number</p> <p>April 28, 2011 _____ Date</p> </div> </div> <p style="font-size: small; margin-top: 20px;">NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.</p>		
<p><input checked="" type="checkbox"/> Total of 1 forms are submitted.</p>		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen K. Pinto et al. Art Unit : 2121
Serial No. : 10/826,947 Examiner : Tejal Gami
Filed : April 16, 2004 Conf. No. : 1609
Title : PREDICTIVE MODEL VALIDATION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

We respectfully request that a panel of examiners review the rejections made by the examiner because of the deficiencies discussed below.

I. Rejections

Claims 1-28 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lazarus et al., U.S. Patent No. 6,430,539 (Lazarus).

II. Questions For Review

We respectfully request the panel to review the following issue: whether independent claims 1 and 6 were anticipated by Lazarus. We reserve the right to expand the issue or to present new issues when filing an appeal brief.

IV. §102 Rejection Of Independent Claims 1 and 6

Independent claim 1 includes:

1. A machine-base method comprising:
 - ...
 - selecting a first subset of historical data ... comprising less than all of the historical data;
 - ...
 - applying the selected model development process to the first subset of historical data to generate the tentative predictive model;
 - selecting a second subset of the historical data ... being less than all of the historical data
 - ...;
 - applying the tentative predictive model to the selected second subset,

determining whether results of applying the tentative predictive model to the selected second subset validate that the selected model development process will produce a final predictive model that is accurate for data that is not part of the historical data,

if the selected model development process is so validated, then applying the validated model development process to a full set of historical data that includes the first and second subsets to generate a final predictive model,

Lazarus did not describe and would not have made obvious at least the underlined features of claim 1 above. In rejecting claim 1, the examiner stated (Office Action, page 3, emphasis added):

... applying the selected model development process to the first subset of historical data to generate the tentative predictive model (e.g., segment models) (see Table 13 and Col. 38, Lines 23-38);

... if the selected model development process is so validated (e.g., lift chart useful for validating the performance of the predictive models) (see Col. 34, Lines 20-23), then applying the validated model development process to a full set of historical data that includes the first and second subsets generate a final predictive model (e.g. segment models may be merged to produce a single lift chart) (see Col. 38, Lines 37-39),

The examiner interpreted Lazarus' model for each merchant segment as a "tentative predictive model" and Lazarus statement "[W]ithin each offer (e.g. offer ID 1) the segment models may be merged to produce a single lift chart" (column 38, lines 36-40) as describing "applying the validated model development process to a full set of historical data that includes the first and second subsets to generate a final predictive model." The applicant disagrees.

In merging his segment models, Lazarus was not applying "the validated model development process [that generated the tentative predictive model] ... to generate a final predictive model." Instead, in merging segment models, Lazarus meant to produce a single lift chart for multiple segment models of multiple segments that were associated with a particular promotion offer, and not to "generate a final predictive model" for the multiple segments (column 38, lines 23-53). The action of merging the segment models was taken by a targeting engine 422, which did not have the function of generating predictive models (column 37, lines 39-43 and column 31, lines 12-15). Instead, the target engine 422 used results (e.g., lift charts) of segment predictive models generated by the segment predictive model generation module 530 to specify targeted populations for each merchant segment to send promotional offers to the

specified population (id.). Accordingly, Lazarus' discussion regarding "segment models may be merged" had nothing to do with generating "a final predictive model," let alone applying a process to "a full set of historical data" to generate a final predictive model. Lazarus stated:

A lift chart useful for validating the performance of the predictive models by comparing predicted spending in a predicted time window with actual spending. (column 34, lines 21-23)

J. Targeting Engine

The targeting engine 422 allows the financial institution to specify targeted populations for each (or any) merchant segment, to enable selection of the targeted population for receiving predetermined promotional offers. (column 37, lines 39-43)

...

Within each offer (e.g. offer ID 1) the segment models may be merged to produce a single lift chart which reflects the offer as a composition of the segments. The targeting engine 422 then provides the following additional functionality:

...

4. Instruct the reporting engine 426 to generate lift charts for the targeting population in the segment, and for overlapped (combined) segments. (column 38, lines 35-53)

Portions of Lazarus not cited by the examiner also did not describe and would not have made obvious at least the above underlined features of claim 1. Lazarus did not generate both a "tentative predictive model" and a "final predictive model," let alone applying a process to "a full set of historical data" to generate a final predictive model. Instead, Lazarus generated only one predictive model for each merchant segment (column 11, lines 8-10).

In particular, Lazarus clustered merchants into segments based on actual spending patterns to predict future spending of an individual consumer in a specific merchant group (column 2, lines 23-30, column 8, lines 61-63, column 10, line 61-column 11, line 2). For each merchant segment, past transaction data related to multiple consumers (accounts 1...N) was used to generate a segment predictive model (FIG. 9 and column 31, lines 13-24). The generated segment predictive model was evaluated (column 29, lines 7-13), and was used to predict behavior of the consumers (column 29, lines 14-25). Accordingly, other than the predictive model generated for each segment, Lazarus did not generate any "final predictive model" that has the features recited in claim 1, let alone "applying the validated model development process to a full set of historical data ... to generate a final predictive model."

In response to the applicant's argument, the examiner said (Office Action, page 11):

... Lazarus discloses a tentative predictive model (e.g., segment models) (see Col. 38, Table 13; and Col. 38, Lines 23-38) to generate a final predictive model (e.g. predictive model generation system) (see Figure 9; and Col. 16, Lines 4-5; and Col. 31, Lines 12-29). Under such considerations, the prior art teaches the claims as written.

However, Lazarus used figure 9 to explain the process of generating a segment predictive model (column 31, lines 13-17). Further, in column 16, lines 4-5, Lazarus described a predictive model generation system, and in column 31, lines 12-29, Lazarus described a process of generating the segment predictive model. None of the cited portions describes generating a final predictive model in addition to a tentative model. The related texts are reproduced below:

E. Predictive Model Generation System

Referring to FIG. 4b, the predictive model generation system 440 takes as its inputs the master file 408 and creates ... the segment predictive models. (column 15, lines 62-67)

...

FIG. 5 illustrates one embodiment of the predictive model generation system 440 that includes three modules: a merchant vector generation module 510, a clustering module 520, and a predictive model generation module 530. (column 16, lines 4-7)

G. Predictive Model Generation

The training observations for each segment are input into the segment predictive model generation module 530 to generate a predictive model for the segment. FIG. 9 illustrates the overall logic of the predictive model generation process. The master files 408 are organized by accounts, based on account identifiers, here illustratively, accounts 1 through N. There are M segments, indicated by segments 1 through M. The DPPM generates for each combination of account and merchant segment, a set of input and blind observations. The respective observations for each merchant segment M from the many accounts 1 . . . N are input into the respective segment predictive model M during training. Once trained, each segment predictive model is tested with the corresponding blind observations. Testing may be done by comparing for each segment a lift chart generated by the training observations with the lift chart generated from blind observations. Lift charts are further explained below. (column 31, lines 12-29)

As a response, the examiner also stated (Office Action, page 12, emphasis added):

... Lazarus discloses applying the validated model development process to a full set of historical data that includes the first and second subsets (e.g., historical spending in the cluster) (see Col. 4, Lines 11-16). Under such considerations, the prior art teaches the claims as written.

However, as reproduced below, in column 4, lines 11-16, Lazarus did not describe applying a validated model development process to a full set of historical data. Instead, the text merely described generating a predictive model for each merchant segment:

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Given the merchant segments, the present invention then creates a predictive model of future spending in each merchant segment, based on transaction statistics of historical spending in the merchant segment by those consumers who have purchased from merchants in the segments, in other segments, and data on overall purchases. (column 4, lines 11-16)

In addition, the examiner's reply contradicted his statement in rejecting claim 1 in the same office action, where the examiner referred to the exact same text of Lazarus as describing "the first subset of historical data comprising less than all of the historical data" (Office Action, page 3, emphasis added):

**As to independent claim 1, Lazarus discloses a machine-base method comprising:
... the first subset of historical data comprising less than all of the historical data
(e.g., historical spending in the cluster) (see Col. 4, Lines 11-16);**

Independent claim 6 is also patentable over Lazarus for at least reasons similar to those discussed for claim 1.

Please apply any deficiency in fees to deposit account 06-1050, referencing the attorney docket number 17146-0008001.

Respectfully submitted,

Date: April 28, 2011 _____

/Yina Mo/ _____

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